



Name _____

Practice: For use after Lesson 2.3, Algebra 2 with Trigonometry

Algebra 2
Unit #7
WS #4

Conjunctions and Disjunctions

Classify each sentence as a conjunction or a disjunction and state whether it is true, false, or open.

1. $2 - 5 = -3$ and $5 - 2 = 3$ _____

2. $5 \div 1 = 5$ or $0 \div 5 = 5$ _____

For each of the following sets, find $A \cap B$ and $A \cup B$.

3. $A = \{2, 4, 6, 8, 10\}$; $B = \{1, 2, 3, 4, 5, 6\}$ _____

4. $A = \{a, b, c, d, e\}$; $B = \{a, e, i, o, u\}$ _____

Graph the solution set.

5. $x > 1$ and $x < 5$

6. $x > 6$ and $x < 8$

7. $x < 0$ or $x > 3$

8. $x < -6$ or $x > -5$

State whether each sentence represents an intersection or a union of sets and find the set that represents that intersection or union. Assume that the universal set is the set of integers between -9 and 9 .

9. the set of multiples of 4 and the set of odd integers _____

10. the set of even integers or the set of multiples of 6

11. $\{x: x > 6 \text{ and } x: x < 9\}$ _____

12. $\{x: x < -5 \text{ or } x: x > 6\}$ _____

Applications

13. Logic If p represents one sentence and q represents another sentence, then " p and q " is a conjunction, " p or q " is a disjunction, $\sim p$ is the negation of p , and $\sim q$ is the negation of q .

Complete the truth table at the right using T for true and F for false.

Note that all possible combinations of true and false for two sentences are considered.

p	q	p or q	p and q
T	T	T	_____
T	F	T	F
F	T	_____	_____
F	F	_____	_____

MIXED PRACTICE

Solve and write the solution set using set-builder notation.

14. $-5 - 2n \geq 17$ _____

15. $3(2 + 4x) < 19 - x$ _____